

## Music for everyone: “building the space where the differences co-exist”

B. E. Avila-Haro<sup>1</sup>, J. A. Avila-Haro<sup>2</sup> & J. A. Avila<sup>3</sup>

<sup>1</sup>*Faculty of Architecture, National University of Mexico (UNAM), Mexico*

<sup>2</sup>*RMEE Technical University of Catalonia, Spain*

<sup>3</sup>*Institute of Engineering,  
National University of Mexico (UNAM), Mexico*

### Abstract

We create environments to be used by people, and any interaction problem between that product and the user is a consequence of an inadequate design. Nowadays architecture is mostly oriented to the search of innovative solutions where the creativity is not necessarily committed to the human necessities. Music allows us to experiment with its different alternatives, harmonies and rhythms. If music has been able to please any demand for decades, architecture could be flexible for the actual needs, letting us see, hear, feel, touch and taste the architecture that surround us. This work pretends to create a design for everyone, for every life period and as a result the creation of an architecture, read under different criteria, and experienced of different ways. The project is located in the seismic zone IIIb with highly compressive soils in Mexico City. It is composed by a group of eight buildings with one to two stories that conform a music school and a therapy music centre. Each building is located in platforms and unevenness in order to take the maximum advantage of the topographic conditions of the emplacement. The architectural design starts from a previously established modulation of 3.66 m and its variations allow us to play with the shapes and locations, guaranteeing a clear internal-external, structural and constructive spatial distribution. The reuse of the materials extracted from the ground is important for the texture and the sensorial goals of each building. Because of the location of the buildings, the use of gravity systems for water distribution is possible, as well as the recovery and reuse of pluvial water for sanitary nucleuses and irrigation. The orientation of each building allows the use



of interior natural lighting and solar luminaries for the exterior of the facilities, guaranteeing a sustainable project that does not impact the environment.

*Keywords: universal design, sensory function, sensitive architecture, music.*

## 1 Introduction

From ancient Greece onwards, the existence of a term of human perfection has been believed, causing the segregation of the population into groups according to their similitudes and differences with this term; the latter has provoked that many people have been excluded of the society and therefore limited to a different quality of life.

For decades, architects have formed and designed spaces respecting the guidelines and dimensions established in manuals that are only capable of recognizing a perfect and immutable user, who is able to adapt to those proposed spaces. Nevertheless, the surrounding reality is different and we have to open our eyes to notice that we have been designing for a user that is not real; in order to be able to freely and personally develop in the proposed architecture, the human being should be perceived as a user with different necessities and challenges.

The intention of this work is to cooperate in the huge task of dignifying human life and to contribute in the erection of a wall against the waves of dehumanization and vulgarity. It must be understood that architecture can only be considered as complete due to the intervention of the human being, who experiments and brings it to life, but if we don't understand that the human being is extremely diverse as well as its necessities and requirements, our duty as architects will not be accomplished [1].

Along 40% of our life, interaction problems with the surroundings are present. This problems are mainly caused because the way our surroundings respond to the requirements of each one. Nowadays, the products don't adapt to our demands and, therefore, the user is in a constant struggle for different solutions to upgrade its life experience. In order to design better we need to design for everyone.

As architects, we create environments, products or services to be used by people, and any interaction problem between the product and the user is considered a consequence of and inadequate design. Today's architecture is oriented in the search of new forms and innovative solutions, in which the creativity is not necessarily compromised with the requirements and the human behaviour. The designs are addressed for a "normal" or average human being, although what is "normal" for human beings is diversity.

In order to generate any change and create equal opportunities it must be understood that this world was created for everyone, and if men is ignored, architecture is unnecessary.

## 2 Objectives and scope

The aim of this work is to demonstrate that architecture can be a bridge that allows us to unite our differences and accept ourselves as people.



The project exhibits the problem that has been present for decades of designing spaces for a same perfect user based on a standard model, which leaves out human heterogeneity. It also presents the different terms and classifications created among several years that categorize and label a specific group of people, censoring their right to live in society.

The task of an architect is to create spaces that receive the human being as it is, understanding the different problems that its environment can present and discovering which our best contribution could be without any negative impact on the ambience. The adjustment of spaces for the existent human diversity, pretends to use design methods that allow the inclusion of users into society and not only its accessibility.

Music, as an inspiration, demonstrates us that since we are born and for many decades is an important factor in our lives, allowing us to establish a communication method to unite masses of people that adapts to the diverse necessities and requirements, influencing our human behaviour.

For this work, the strategic selection of the location with its current problems, the evolution of the design, and the architectonic proposal that demonstrates that architecture can be an element that allows to forget our differences and therefore to share a common space in which we can create a full social life, are presented.

### **3 Methodology**

#### **3.1 Universal design criteria**

The universal design is a design paradigm relatively new, which is focused on the development of easy access products, and environments for as many people as possible, without the necessity of adapting or re-designing them in any special way.

This concept emerges from the design without bounds, in which the universal design has a full accessibility spectra range. The purpose of the universal design is to simplify the everyday tasks of the user through the development of products, services and reusable environments, which is intended to benefit users of all ages and necessities [2].

The points to be covered are:

- Equal use: the design must be easy to use and appropriate for any user despite of its capabilities and abilities.
- Flexibility: the design must adapt to a wide range of individual preferences and abilities.
- Simple and intuitive: the design must be easily readable no matter which is the experience, knowledge, ability, or the concentration level of the user.
- Information easy to perceive and interpret: the design must be able to exchange information with the user regardless the environmental condition or sensory capacity of the user.
- Scarce physical effort: the design must be efficiently used and with the minimum possible effort.



- Appropriate dimensions: the spaces must be appropriate for its adequate use, independently of their size, location and mobility.
- In-situ materials reuse: the design expects in-situ materials reuse, maintaining a sensory function.

### 3.2 Music ¿why?

All human beings suffer interaction problems with our environment 40% of our lives. These problems are mainly motivated by the way our environment responds to our individual needs. Nowadays, the products don't adapt to our requirements, leading us to a continuous fight in order to obtain diverse solutions to improve our life experience.

Music, on the contrary, is an effective method to communicate values and global identities. It transmits a message that is understood by everyone, giving a sense of belonging.

Music eases the establishment and permanency of human relationships, contributing to the adaptation of the individual to its environment. Different types of music can produce diverse feelings, which can also impact in the cognitive and psychomotor tasks.

Music is a topic that has had deep impact along our life and it has allowed us to experiment with its different alternatives, styles, harmonies and rhythms. For decades, music has been able to satisfy any demand, therefore, architecture could be flexible to the current needs; allowing us to see, listen, feel, touch and taste the architecture that surround us.

## 4 The project

The universal design basis proposed herein pursues a design “for everyone and for every period of life”, where senses become the guidelines to read the proposed spaces and, as a result, an architecture for different criteria is created and experienced in diverse ways.

The project is developed in San Juan de Aragón forest, which has an approximate territorial extension of 158.5 hectares. It is located in the border of the Gustavo A. Madero district in Mexico City, Mexico.

The complex is conformed of 8 buildings with one to two stories, strategically located in different platforms and unevenness as a result of the previous analyses, the activity to be developed, and the sensory proposal of each one. In order to establish a clear interior and exterior spatial, structural and constructive distribution, a module design was used for each building.

One of the purposes of this work is the search of total autonomy of the user via the sensoriality of its spaces obtained from the universal design system. Each building has a different sensory function defined by the activity to be developed. The latter allows us to establish a remarkable difference between one building and another, avoiding any confusion in the proposed spaces.

The main function of the sensoriality theme is to propose a method that let us read the spaces and use each of our senses to accomplish a more rich experience



outside of the ordinary. Architecture proposes the enrichment of our sensations by different criteria and diverse ways of experience it.

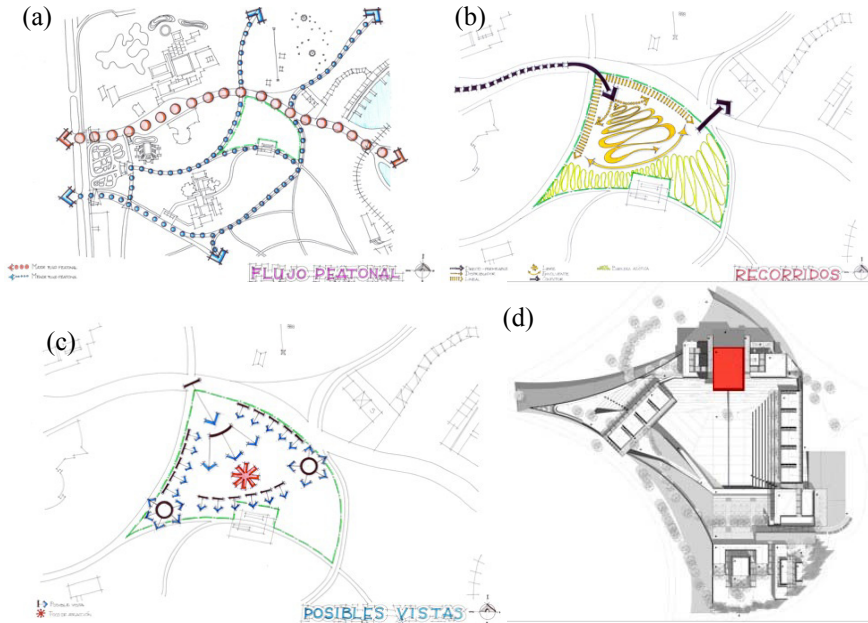


Figure 1: Site analysis: (a) pedestrian flow, (b) tours, (c) possible views, and (d) plan set.

## 4.1 Architectonic programme

### 4.1.1 Service building 1 (secondary auditoriums)

Ground floor:

- 2 secondary auditoriums (capacity for 50 people)

Upper floor:

- Lobby
- Waiting area
- Musical instruments lending room
- 4 essay rooms (capacity for 5 people)
- 3 essay rooms (capacity for 10 people)
- WC for men
- WC for women

### 4.1.2 Main auditorium

- Waiting area
- Auditorium (capacity for 200 people)

### 4.1.3 Service building 3 (bookshop)

Ground floor:

- Lobby
- WC for men



- WC for women
- Medical centre (capacity for 3 people)
- Photocopying and stationary centre
- Bookshop (capacity for 50 people)
- Warehouse

Upper floor:

- Lobby
- Waiting area
- WC for men
- Work area (capacity for 12 people)
- Meeting room (capacity for 12 people)
- Teachers room (capacity for 16 people)
- Leisure terrace
- WC for women
- Reception
- Direction

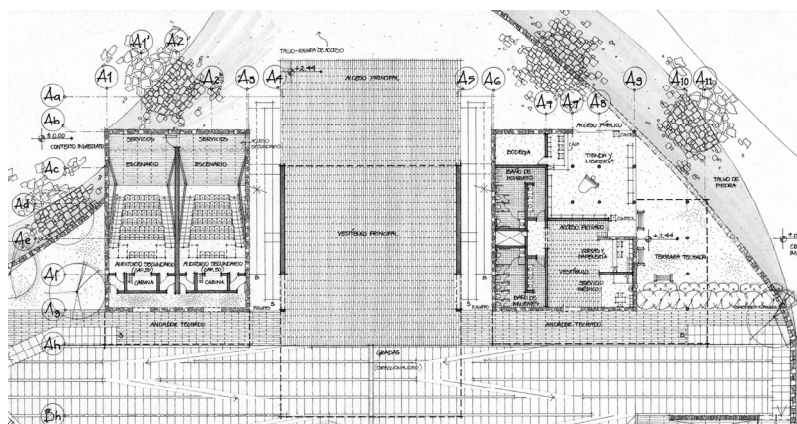


Figure 2: Service building 3 (ground floor plan).

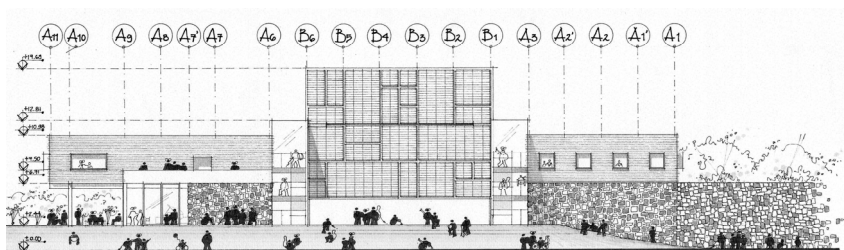


Figure 3: Service building 3 (north façade).

#### 4.1.4 Instrumental practice classrooms

- Cords (capacity for 12 people)
- Wood (capacity for 12 people)
- Metal (capacity for 12 people)
- Percussion/guitar (capacity for 12 people)
- Piano/organ (capacity for 8 people)

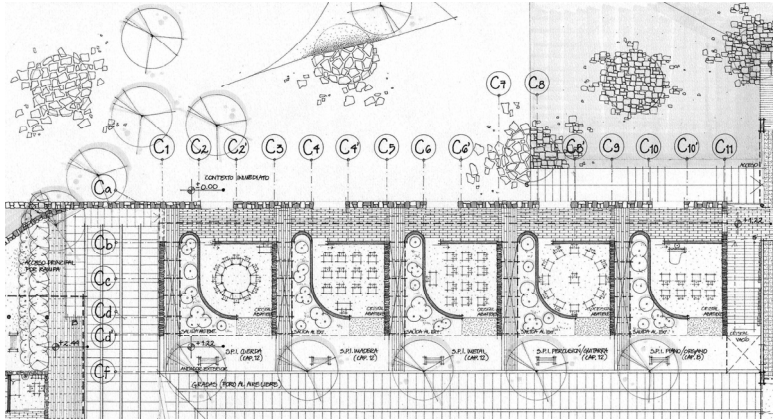


Figure 4: Instrumental practice classrooms (ground floor plan).

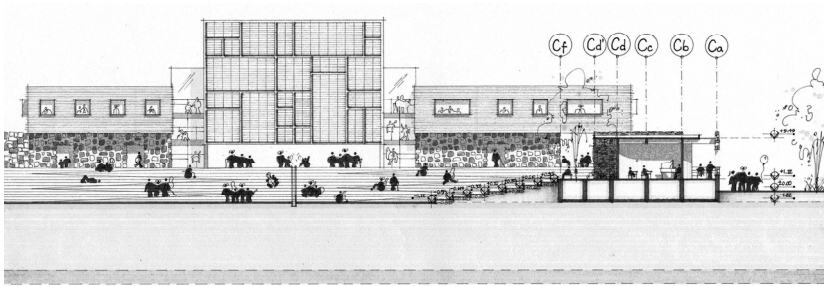


Figure 5: Instrumental practice classrooms (cross section).

#### 4.1.5 Cafeteria

- Free access terrace
- Private terrace
- Living room
- Dining room (capacity for 50 people)
- Kitchen (preparation and storage of food)
- WC for men
- WC for women

#### 4.1.6 Music therapy centre

- WC for men
- Main activities room (capacity for 30 people)
- 2 secondary activities rooms (capacity for 10 people)
- 7 offices (capacity for 3 people)
- Administrative area (capacity for 10 people)
- WC for women

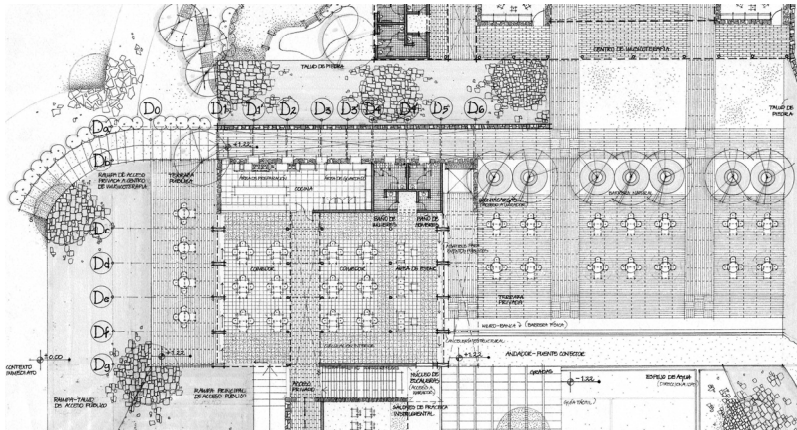


Figure 6: Cafeteria (ground floor).

#### 4.1.7 Library

- Lobby
- Waiting area
- Control and lending area
- Administrative area (capacity for 5 people)
- Previous consultation area
- Consultation area (capacity for 32 people)
- Collection of books
- Web consultation area (capacity for 8 people)
- Musical exhibition area
- Lecture room (capacity for 10 people)
- WC for men
- WC for women

#### 4.1.8 Theoretical lessons classrooms

- Restoration of instruments workshop (capacity for 10 people)
- Theory lessons room (capacity for 8 people)
- Theory lessons room (capacity for 12 people)
- Vocal lessons room (capacity for 8 people)

#### 4.2 Capacity and areas

- Service building 1 (secondary auditoriums)  
Total capacity: 170 users. Total area: 616.48 m<sup>2</sup>
- Main auditorium  
Total capacity: 225 users. Total area: 481.89 m<sup>2</sup>
- Service building 2 (bookshop)  
Total capacity: 135 users. Total area: 727.63 m<sup>2</sup>
- Instrumental practice classrooms  
Total capacity: 60 users. Total area: 725.26 m<sup>2</sup>
- Cafeteria  
Total capacity: 130 users. Total area: 1,161.37 m<sup>2</sup> (Terraces: 721.67 m<sup>2</sup>)

- Music therapy centre  
Total capacity: 80 users. Total area: 1,147.63 m<sup>2</sup>
- Theoretical lessons classrooms  
Total capacity: 40 users. Total area: 772.61 m<sup>2</sup>
- Library  
Total capacity: 100 users. Total area: 1,010.95 m<sup>2</sup>

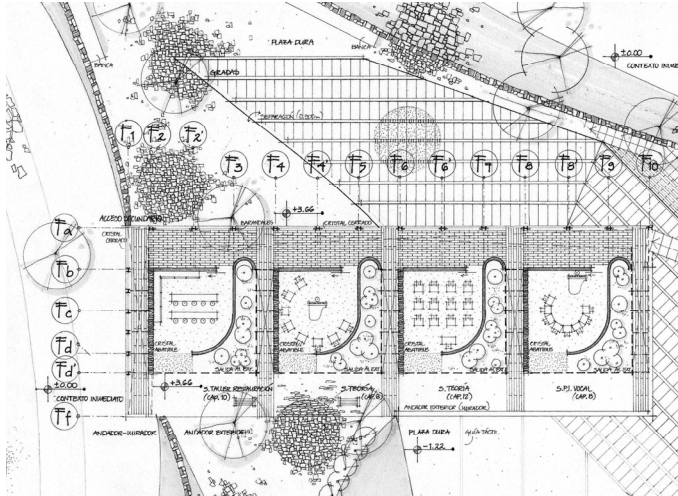


Figure 7: Theoretical lessons classrooms (ground floor).

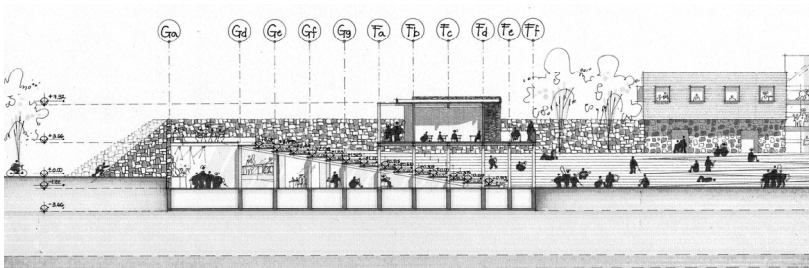


Figure 8: Theoretical lessons classrooms and library (cross section).

### 4.3 Finishes

#### Walls:

- Earth tone natural stones in different sizes, finishes, class and joints, depending on the activity to be developed
- Black laja stones
- Stave finish concrete
- Terracotta panels
- Acoustic wood panels



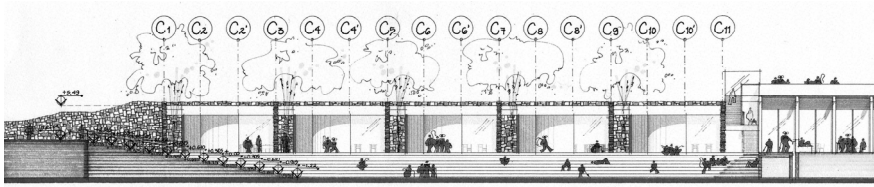


Figure 9: Instrumental practice centre (east façade).

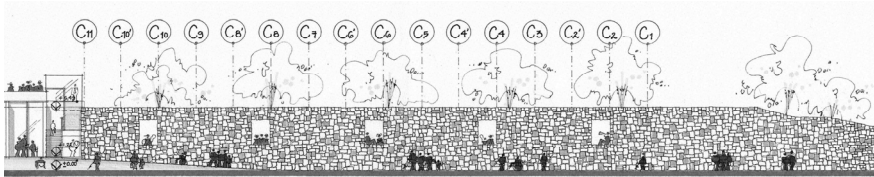


Figure 10: Instrumental practice centre (west façade).

#### Pavements:

- Natural finish concrete
- Earth tone laja stones
- Clinker bricks
- Different finishes mosaics with dimensions according to the activity to be developed
- Soft rubber with different dimensions and colours according to the activity to be developed
- Hard-burnt bricks
- Wood staves

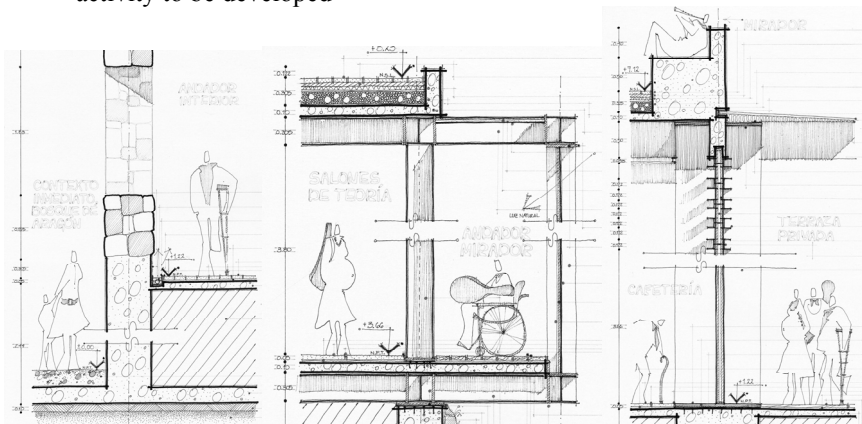


Figure 11: Façade details.

#### 4.4 Sensoriality of each building

Service building 1 (secondary auditoriums): sense of hearing

Main auditorium: sense of hearing

Service Building 2 (bookshop): sense of touch  
 Instrumental practice classrooms: sense of smell  
 Cafeteria: sense of touch  
 Music therapy centre: sense of touch  
 Theoretical lessons classrooms: sense of sight

## **4.5 Foundation**

The project is located in the seismic zone III (lake zone) of Mexico City, which presents a highly compressive ground, being necessary a box foundation in order to avoid differential movements.

## **4.6 Construction system**

Most of the buildings use a load bearing walls system, following the previously establish modulation of 3.66 m and their variants which allow us to play with shapes and locations according to the function to be developed, directing or guiding the users to their activities.

## **4.7 Facilities**

### **4.7.1 Hydraulics and sanitation systems**

A gravity system is used for the water distribution due to the gradient that the ground presents. Rainwater is collected and reused for irrigation and sanitation uses after a proper treatment. The use of a hydro-pneumatic tank will be used for the rainwater distribution at higher pressures.

### **4.7.2 Electrical system**

Due to the proposed sensoriality, the use of a lighting system that differentiates the activities will be used, allowing the generation of different atmospheres according to the activities to be developed. The project is divided in three different lighting types: work lighting, sign lighting and leisure lighting. In the field of sustainability, low consumption luminaires and solar panels will be used.

## **4.8 Sustainability**

With the purpose of a responsible use of natural resources and the philosophy of a low environment impact project, the use of natural materials, natural interior lighting, solar panels, as well as a recovering/reuse rainwater system are to be implemented.

## **5 Conclusions and recommendations**

Real change can only be achieved paying attention to the words to be used, which can reflect negative attitudes; terms like “disabled, handicapped, ill”, etc. are particularly revealing; those words are labels that categorize and stereotype a certain group of diverse people which may not have nothing intrinsic in



common. It is extremely important to eliminate these labels because they are nothing but a different way to emphasize discrimination, and if our target is to build a world for everyone, with adequate security and autonomy conditions, these historical frontiers must be removed. The basis of the universal design proposed here, pursues a full human and environmental life by accepting the way we are and our differences. Any transformation requires to suppress any barrier, to vanquish ignorance and indifference. The aim of this work is a design for everyone for every period of a lifetime, allowing primarily integration.

Music has had a deep impact along our lives, permitting experiences with different alternatives, styles, harmonies and rhythms. Disregarding the differences, music has been able to please any listener for several decades, being flexible for the individual necessities.

If music has been able to unite our physical, mental and cultural differences, is architecture capable of this? For this purpose, a total autonomy and independence of each user in the proposed interior and exterior spaces is sought, and thus the understanding of the different requirements and needs, as well as the surrounding environment, was extremely important. The sensory proposal allows us to experiment architecture in a non-conventional way, where the senses are the guidelines to be able to read the proposed spaces and in this way, see, hear, feel, touch and taste the surrounding architecture.

It is recommended that architects try to be guided through a new design criterion, as a result of his understanding of the users, their necessities and requirements. The aim of an architect's work is to allow that anyone can freely feel and experience his architecture, and at the same time, to encourage the cohabitation of our differences in a safe and lasting environment.

"The same text admits an infinite number of interpretations"

Friedrich Nietzsche

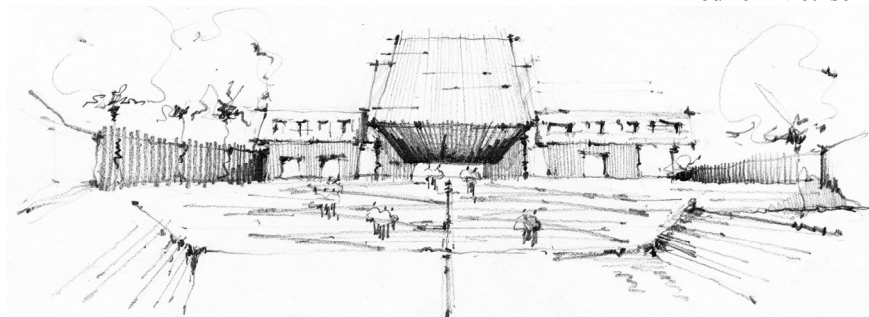


Figure 12: Service building (south façade perspective).

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